CHAPTER 1

INTRODUCTION

1.1 Background of Research

In a competitive market, the demand for quality is emerging as the single most critical factor for companies to survive in the ever expanding global market place. Quality is vital in determining the economic success of manufacturing companies (Garvin 1988; Curkovic, *et al*., 2000). World class manufacturing companies gain competitive edge and greater market share through extraordinary levels of performance by providing a quality product with a competitive price as required by demanding customers.

The concept of Total Quality Management (TQM) has been developed as the result of intense global competition. Organizations with international trade and global competition have paid considerable attention to TQM philosophies, procedures, tools and techniques. According to Juran, international competition requires higher levels of quality by organizations (Blackiston, 1996).

However, the implementation of quality management has not occurred at the same pace in different regions of the world. Early implementation started in Japan, US, Europe, and followed by the developing countries. In order to compete in the global market, these countries need to implement quality management practices, tools, and techniques within all sections of their industries. Despite the number of publications and

quantity of research on TQM, little empirical work has been carried out in developing countries, particularly in the ASEAN region.

In Malaysia automotive industry itself, there are a few studies that have been conducted on the implementation of quality practices. Noviyarsi (2005) had developed a framework for quality engineering implementation which can assist the automotive companies to meet their customer satisfaction. Deros *et al*. (2004) had suggested a framework for benchmarking implementation for automotive manufacturing SMEs. Meanwhile, Sohail *et al*. (2003) had compared the TQM practices and organizational performances of companies with and without ISO 9000. They pointed out there are significant differences in performances between certified and non-certified companies. However, all of them focus within Malaysian context, and till date no research has been conducted in quality practices and implementation especially on comparative study among ASEAN country dedicated to automotive industries.

Since the realization of ASEAN Free Trade Area (AFTA) in 2005, it shows the impact on Malaysia's car manufacturer sales. Prior to AFTA, most of Malaysian automotive market is protected by the government with instruments such as tariffs, refunds schemes and investment control in order to compete with their overseas competitors. Actually, AFTA, for automotive industries, in a positive perspective would drive the regional manufacturing integration and cost competitiveness among ASEAN countries rather being a threat to them. Based on analysis for the world vehicles market for the year 2000 and projected 2010 by The Malaysian Automotive Association report (2006), as shown in Figure 1.1, ASEAN is the fifth largest market in the world and Malaysia is far behind when compared to Thailand by the year 2010.

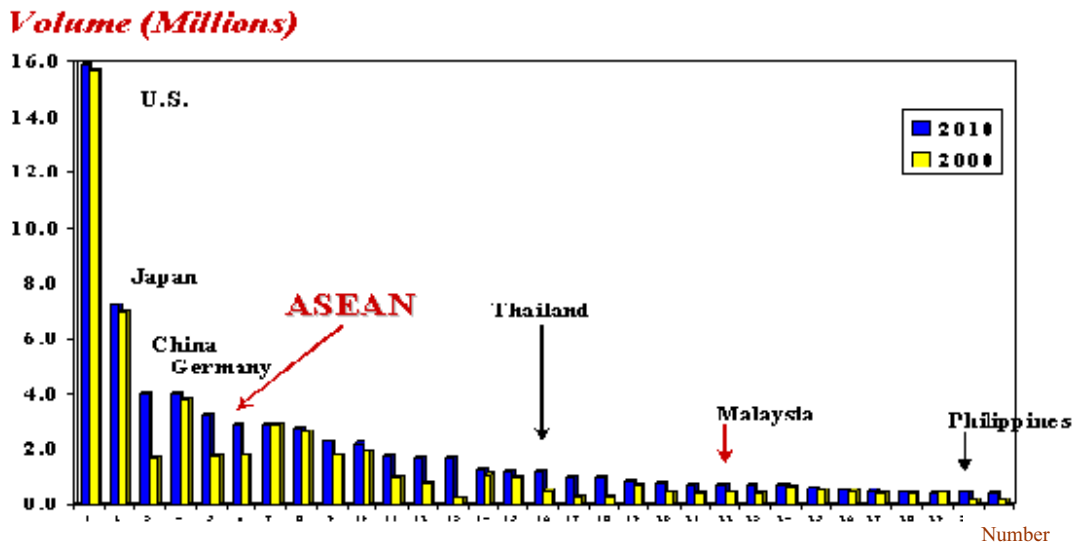

Figure 1.1 The world vehicle market for year 2000 and projected for 2010

(The Malaysian Automotive Association, 2006)

In the quest to standardize quality certification requirements, the automotive original equipment manufacturers (OEMs) have strongly suggested to their suppliers to obtain ISO/TS16949 registration. ISO/TS16949 is an ISO technical specification jointly developed by the International Automotive Task Force (IATF) and the ISO that serves as a common automotive quality system requirement catalog. This specification aligns existing American (QS9000), German (VDAG.1), French (EAQF) and Italian (AVSQ) automotive quality systems standard within the global automotive industry (Kartha, 2004).

Having a quality system in place and obtaining ISO/TS16949 registration does not necessarily assure organizational performance improvement. There is no guarantee of business after completing quality certification, but failure to do so may result in loss of business opportunities.

Given the importance of automotive industries to the Malaysian economy, the author decided to evaluate the impact of ISO/TS16949 registration efforts on the

relationship between TQM and organizational performance. In order to survive in a competitive market place, quality practices implementation is one of the key issues that can help align organization's to stay competitive. Besides that, based on current situation, comparative study among ASEAN, especially Thailand, could provide an overall perspective and understanding of the main differences and similarities for TQM practices and the impact of ISO/TS16949 certification. Those strength that exist within the Malaysian automotive practices can be maintained, while those lacking in practices from Thailand counterparts could probably be absorbed and copied by Malaysian automotive industry players.

1.2 Problem Definition

Malaysia used to be the largest auto market in ASEAN but recently it has been overtaken by Thailand and Indonesia and now is in third place (Ahmad, 2006). Prior to AFTA, the Malaysian automotive industry enjoyed considerable growth but now faces intense competition from ASEAN and other global manufacturers. Furthermore, to help the National Automotive Policy (NAP) achieve one of their objectives which is to promote Malaysia as an automotive regional hub, further research is essential. By implementing TQM practices, it is believed workforce productivity and production efficiency will be upgraded to be competitive and customer focused.

In the automotive industry, the demand for ISO/TS16949 registration is increasing rapidly, as many car manufacturers require that their suppliers to obtain it. ISO/TS16949 registration requires the existence of proper quality plans, programs, documentation, and procedures. Despites being demanding, there is still considerable confusion surrounding the effects of ISO/TS16949 registration efforts on the TQM practices and organizational performance. A review of the literature identified a lack of study especially on the effects of ISO/TS16949 in the automotive industry.

Besides that, the main motivating factor for conducting this research was to find out the gap between the Malaysian and Thailand automotive industries on the relationship between TQM practices, ISO/TS16949 and organizational performance. Parast *et al*. (2006) pointed out that more comprehensive and comparative studies of successful quality practices implementation would be helpful especially for those who are still struggling. It is strongly believed that the findings of this research will be suitable, effective and help local car manufacturers and suppliers in their effort to become more effective and competitive.

1.3 Research Questions

Four research questions to be addressed in this research are:

i. To what extent Malaysian and Thailand automotive industries implement TQM?
ii. Does TQM implementation contribute to organizational performance in Malaysian and Thailand automotive industries?
iii. Does ISO/TS16949 contribute to organizational performance in Malaysian and Thailand automotive industries?
iv. Does ISO/TS16949 affect the relationship between TQM and organizational performance in Malaysian and Thailand automotive industries?

1.4 Research Objectives

The research has three main objectives, which are as follows:

i. To identify and assess the TQM constructs, ISO/TS16949 efforts and organizational performance measures for Malaysian and Thailand automotive industries.
ii. To develop a research model of the TQM, ISO/TS16949 and organizational performance relationship.
iii. To analyze and compare the relationship of TQM, ISO/TS16949 and organizational performance between Malaysia and Thailand automotive industries.

1.5 Scope and Assumptions

To make the research more effective and manageable, the research scope of this study focused on three main areas, which are as follows:

i. This research will focus on the TQM implementation and efforts on ISO/TS16949 registration in Malaysia and Thailand automotive industries.
ii. The population and samples of survey respondents targeted in this research will comprise of automotive industries operating in Malaysia and Thailand.
iii. The proposed research model can act as a guideline for Malaysian automotive industries to improve their performance. Actual implementation in any company is beyond the scope of this research.

The following assumptions were made regarding this research:

i. The instruments applied in this research measure TQM constructs, ISO/TS16949 efforts and organizational performance are valid and reliable.
ii. The distributions of the randomly selected subjects were assumed to be normal and provide a valid representation of the population of the study.
iii. Respondents of the questionnaire would give honest answer to survey questions regarding their organization.

1.6 Significance of Research

Research on quality management practices in the ASEAN region will add to the total knowledge of quality management and could help to develop a unique model for quality management. The implementation of TQM practices and implementation has been enhanced to compete with new challenges in business and to satisfy the emerging quality paradigm (Thia *et al*., 2001; Linderman *et al*., 2004). Several authors have pointed out the need for more empirical research (Flynn *et al*., 1995; Walton and Handfield, 1996), and also the need for more sophisticated research designs in the study of quality practices field among developing countries (Parast *et al*. 2006). While, with the impressive growth of ISO/TS16949 registration implies that awareness exists for the importance of this certification. Surprisingly, it may seem there are only small numbers of empirically based attempt to test the significance of ISO/TS16949 certification. Additionally, there is no empirical studies that examine the relationship between TQM, ISO/TS16949 and organizational performance.

Several researchers have pointed out the importance of international quality practices research extended to other countries and regions around the world. Lin *et al.* (2004) conducted a comparative study of quality practices between three countries in automotive industries; USA, Japan and Taiwan. They have identified the differences and

pointed out what practices lead to efficient or inefficient performance. While, Iwaarden *et al.* (2006) had focused on quality management practices for European countries in automotive industries. They found that the management control model in the quality management is useful in explaining what changes are necessary to maintain high quality levels. Most of these studies, however, use different methodology, instruments and constructs for comparing quality practices across countries around the world. No study was found comparing quality practices in automotive industries within ASEAN countries.

The model developed in this research will hopefully facilitate and simplify the quality practices implementation process for local car manufacturers and suppliers; help them identify the gap between their current practices and best practices compared to their competitors and develop a plan to reduce the gap. So, the needs of the Malaysian automotives industries for a proper quality implementation and practices is significant and clear in order to jump to a higher level of global competition.

The research findings will lead to a better understanding and provide new insights for quality management area where TQM and ISO/TS16949 registration efforts are important to improve organizational performance. As such, it is expected to benefit both researchers and practitioners.

1.7 Definition of Terms

The following definitions are adopted in the context of this thesis:

a) Direct Effect (DE)

Direct effect is a directional relationship between two variables with no intervening variables (Hoyle, 1995)

b) Endogenous Variables

Endogenous variables are those influenced by factors that are inside the structural model (Mueller, 1996)

c) Exogenous Variables

Exogenous variables are those influenced by factors that are outside the structural model (Mueller, 1996)

d) Indirect Effect (IE)

Indirect effect is the effect on one variable (independent) on another (dependent) through one or more mediating variables (Hoyle, 1995).

e) ISO/TS16949

ISO/TS16949 is an ISO technical specification that represents a comprehensive quality management system for the global automotive industry to achieve world class levels of product quality, productivity, competitiveness and continual improvements.

f) Latent variable

Latent variable is an unobserved variable.

g) Organizational Performance

Measurement of the performance of one company's against those of another company.

h) Structural Equation Modeling (SEM)

Structural equation modeling is a multivariate analytic tool, which incorporates both the theoretical and empirical aspects of research and is supported by powerful computer software packages such as AMOS (Chinna, 2009)

i) Total Quality Management (TQM)

A customer-focused management philosophy and strategy management, which seeks continuous improvement in business, process using tools and techniques, which encompasses the participation of all employees.

1.8 Research Contributions

This study examines the relationship among TQM, ISO/TS16949 and organizational performance in Malaysian and Thailand automotive industries. The research findings are expected to contribute to the theory and practice of automotive industry.

This study provides an academic contribution, with its empirical evidence and validation which would makes it generally applicable within automotive organizational performance measurement in quality management area. The developed and tested content of this study fills the research gap by providing a reliable and useful reference material on the critical factors of TQM implementation and ISO/TS16949 registration efforts on organizational performance.

On top of that, the contribution for practitioners is to provide important guidelines for automotive and related companies to implement TQM with ISO/TS16949 registration efforts to improve organizational performance. The measurement instruments developed in this study should be a valuable tool for organizations to evaluate and compare their current practice.

1.9 Outline of Thesis

This thesis is organized into seven chapters as shown in Figure 1.2. The first chapter has highlighted the background of research. It has also outlined the research questions, objectives, scope and assumptions, the significance of this research, definitions of terms and finally research contributions. Chapter two presents some review of literature to understand the issues of the research. The review describes about automotive industries in Malaysian and Thailand, total quality management and performance measurement systems.

Chapter three critically reviews the development of TQM constructs, ISO/TS16949 efforts and performance measures constructs. This is followed by brief review on the use of structural equation modeling by past researchers. Based on that, a proposed research model has been developed which will be used in this study for Malaysian and Thailand automotive industries. Finally, this chapter provides a research hypotheses development.

Chapter four is to illustrate the methods and procedures that will be used in the study. It gives a detail description of the research process and discusses each of the research stages. This chapter starts with a research design, a discussion on the overall structure of the research methodologies, and survey methodology. In survey methodology section, a detailed explanation has been provided on questionnaire development, expert validation, pilot study, population and sampling of the study, reliability, validity, and statistical analysis.

The fifth chapter presents the results of the survey. It discusses the respondents' general descriptive statistics, validation of the survey instruments by using reliability and validity test. The chapter also presents a set of hypothesis testing included to test significant difference in TQM implementation in Malaysian and Thailand automotive industries, moderator analysis and mediator analysis.

Chapter six provides an overall discussion of research findings and implications in light of the results of Chapter five. Finally, Chapter seven concludes the thesis with lists of contributions, conclusions and recommendations for further research.

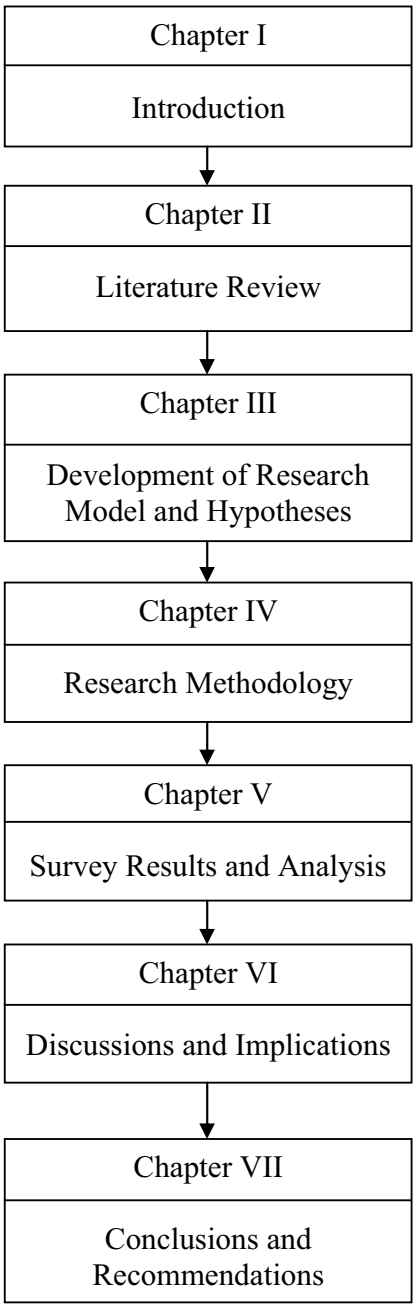

Figure 1.2 Organization of the thesis

1.10 Summary

This chapter has laid the foundation for the thesis. Among others, it has introduced the background of the research and described the objectives and scope of the research. The research significance is briefly described, definition of terms used in this research is presented, research contributions are highlighted and the organization of the thesis is outlined.